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- (75) Inventors/Applicants (*for US only*): SAWYER, Alan, Michael [GB/DE]; European Molecular Biology Laboratory, Postfach 102209, D-69012 Heidelberg (DE). DE MASI, Federico [IT/DE]; European Molecular Biology Laboratory, Postfach 102209, D-69012 Heidelberg (DE).
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



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(54) Title: METHOD FOR PRODUCING MONOCLONAL ANTIBODIES

(57) Abstract: The present invention relates to methods for producing monoclonal antibodies. In particular, the invention relates to high throughput methods for producing and screening monoclonal antibodies more rapidly than conventional methods.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/GB 03/01684

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K16/00 C12N5/16 C12N15/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, MEDLINE, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 96 33735 A (CELL GENESYS INC) 31 October 1996 (1996-10-31) page 6, line 23 - line 34 page 9, line 26 - page 10, line 17 page 14, line 19 - page 16, line 21 claims 1,3,17-20; examples 6,9	1-16,18, 19
Y	TEMLIN M F ET AL: "Protein microarray technology" TRENDS IN BIOTECHNOLOGY, ELSEVIER PUBLICATIONS, CAMBRIDGE, GB, vol. 20, no. 4, 1 April 2002 (2002-04-01), pages 160-166, XP004344214 ISSN: 0167-7799 whole document especially page 165 left-hand column paragraph 4 -/--	1-16,18, 19



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

I later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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* & * document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/GB 03/01684

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>LUEKING A ET AL: "PROTEIN MICROARRAYS FOR GENE EXPRESSION AND ANTIBODY SCREENING" ANALYTICAL BIOCHEMISTRY, ACADEMIC PRESS, SAN DIEGO, CA, US, vol. 270, no. 1, May 1999 (1999-05), pages 103-111, XP000949937 ISSN: 0003-2697 abstract page 110, left-hand column, paragraph 2 -right-hand column, paragraph 1 ---</p>	1-16,18, 19
Y	<p>WO 01 14425 A (DIACHIP LTD ;KIM SUN YOUNG (KR); PARK EUN JIN (KR); YOON KEEJUNG ()) 1 March 2001 (2001-03-01) page 1, line 6 - line 19 page 6, line 13 - line 15 page 7, line 7 - line 20 page 8, line 3 - line 13 page 8, line 27 -page 9, line 6 page 10, line 26 -page 11, line 12 page 13, line 3 - line 10 claims 1-4,13,22 ---</p>	1-16,18, 19
Y	<p>HAAB B B ET AL: "PROTEIN MICROARRAYS FOR HIGHLY PARALLEL DETECTION AND QUANTITATION OF SPECIFIC PROTEINS AND ANTIBODIES IN COMPLEX SOLUTIONS" GENOME BIOLOGY (ONLINE), XX, GB, vol. 2, no. 2, 2001, page COMPLETE XP001147826 ISSN: 1465-6914 abstract page 2, right-hand column, paragraph 2 -page 5, left-hand column, paragraph 1 page 10, right-hand column, paragraph 2 -page 13, left-hand column, paragraph 2 ---</p>	1-16,18, 19
A	<p>ARENKOV P ET AL: "Protein microchips: use for immunoassay and enzymatic reactions" ANALYTICAL BIOCHEMISTRY, ACADEMIC PRESS, SAN DIEGO, CA, US, vol. 278, no. 2, 15 February 2000 (2000-02-15), pages 123-131, XP002234264 ISSN: 0003-2697 abstract page 123, left-hand column, paragraph 1 page 125, right-hand column, paragraph 3 page 126, left-hand column, paragraph 2 -right-hand column, paragraph 2 page 130, left-hand column, paragraph 2 page 130, right-hand column, paragraph 3 - paragraph 5 ---</p>	1-16,18, 19

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 03/01684

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EKINS R.P.: "LIGAND ASSAYS: FROM ELECTROPHORESIS TO MINIATURIZED MICROARRAYS" CLINICAL CHEMISTRY, AMERICAN ASSOCIATION FOR CLINICAL CHEMISTRY. WINSTON, US, vol. 44, no. 9, 1998, pages 2015-2030, XP002939389 ISSN: 0009-9147 page 2024, left-hand column, paragraph 3 -right-hand column, paragraph 2 page 2026, left-hand column, paragraph 4 page 2028, left-hand column, paragraph 2 page 2029, left-hand column, paragraph 1 -right-hand column, paragraph 1 -----	1-16, 18, 19
P, X	WO 03 019192 A (LAURSEN RICHARD; DERTI ADNAN ; IVANOV SERGEI (US); UNIV BOSTON (US)) 6 March 2003 (2003-03-06) page 12, paragraph 51 -page 14, paragraph 58 claims 10-15 -----	1-15, 18, 19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/01684

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 17, 20-26
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/GB 03 01684

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 17, 20-26

Present claims 17, 23, 24 and 26 relate to immortalised cell lines and present claims 20-22 and 25 to monoclonal antibodies only defined by the methods of isolation without giving any technical features of the cell lines or antibodies.

The claims cover all immortalised cell lines and monoclonal antibodies which could be isolated by the methods claimed, whereas the application provides no support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT for any immortalised cell line or monoclonal antibody. Thus, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT) rendering a meaningful search over the claimed scope impossible. Consequently no search has been carried out for said claims.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No
PCT/GB 03/01684

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9633735 A	31-10-1996	AU 5632296 A	18-11-1996
		CA 2219361 A1	31-10-1996
		EP 0822830 A1	11-02-1998
		JP 11505523 T	21-05-1999
		WO 9633735 A1	31-10-1996
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		US 6150584 A	21-11-2000
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		AU 6735600 A	19-03-2001
		WO 0114425 A1	01-03-2001
WO 03019192 A	06-03-2003	WO 03019192 A1	06-03-2003

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